Curriculum Syllabus

Curriculum Area: Career and Technical Education

Course Title: Electrical and Electronic Systems and Air Conditioning **Grades:** 10-12

Course Description:
Instruction and Shop activities will focus on Chassis Electrical and Electronic Systems, Body Electrical Systems and Engine Electrical Systems. Use of Scan tools, Lab Scopes, and other hand held test equipment and tools will be covered. Students will learn how to diagnose and repair common Electrical/Electronic problems in a logical manner. Basic Heating, Cooling and Air Conditioning System operation and Service will also be covered. Safety Glasses and Protective Clothing provided. (Students are responsible for care.) General Auto Service is a pre-requisite for this class.

Course Expectations and Goals
Students will complete NATEF Standard Job Sheets in these areas:

1. Identify and interpret Vehicle ID numbers.
2. Find and use Service Information
3. General Electrical Service and Diagnosis – 4 Job Sheets
4. Diagnose and Service Starting System – 4 Job Sheets
5. Diagnose and Service Charging System – 2 Job Sheets
6. Diagnose and Service Lighting System – 2 Job Sheets
7. Diagnose and Service Gauges and Warning Lights – 4 Job Sheets
8. Diagnose and Service Horns and Windshield Wipe/Wash – 2 Job Sheets
9. Diagnose and Service Vehicle Accessory Systems – 8 Job Sheets
10. Diagnose and Service Air Conditioning System – 3 Job Sheets
11. Diagnose and Service Heating and Ventilating System – 2 Job Sheets

Course Textbook/Materials:
Modern Automotive Technology; Text and Workbook:
Duffy
Automotive Service; Text and Workbook: Gilles
NATEF Standard Job Sheets
CDX 3.0 Auto Service; (Computer Based Instruction)
CDX Light Duty Vehicle; (CBI)

Major Course Assignments/Requirements:
This course is approximately 40% classroom theory and 60% Hands on Activity. Majority of assignments will be completed in class. Students will have to actively participate in lab/shop activities. Lab/Shop activities will be on components, trainers, shop owned vehicles, customer vehicles for service, and student's own vehicles. Students will be completing Skill Tasks required by NATEF Certification, and instructor designed lab activities. Students will be strongly encouraged to take the State of Michigan Mechanic Certification exam in Electrical Systems at the completion of the class, and can use this test in lieu of regular end of Semester Exams.

Grading and Assessments (Tests and Quizzes):
Students will be graded on Daily Participation, NATEF Tasks completed, (points awarded based on Manufacturers Recommended Service Times and correct completion) Classroom assignment completion and Test Scores.

Homework:
Homework will usually not be assigned. Students will however have the opportunity to complete classroom assignments at home if necessary. Students will have access to Textbooks for home use, or internet or on-line support for homework activities.

Other important Information:
Students will be provided with all materials and equipment for this class. Safety Glasses and Protective clothing will be provided. (Students are responsible for care and cleaning) No lab fees, or other costs are involved. Students will have the opportunity to participate in Skills USA (National Vocational Student Organization - membership fee required) and in activities such as Autorama project vehicles, NAIAS Field Trip, And The Ford/AAA Student Auto Skills Contest, etc. Students will also be exposed to many Career Exploration activities including guest speakers from several area Post Secondary Institutions. (Community College, 4 Year Colleges, and Private Schools) Students will have the opportunity to earn Articulated College Credits at several post secondary schools prior to graduation.